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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,336	02/28/2002	Dieter Kerner	39509-177800	5608

26694 7590 04/01/2003

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EXAMINER

ROBERTSON, JEFFREY

ART UNIT	PAPER NUMBER
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1712

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DATE MAILED: 04/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,336

Applicant(s)

KERNER ET AL.

Examiner

Jeffrey B. Robertson

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 3,8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment to claim 3 is objected to because there are numerous instances of underlined commas in the clean copy of the amendment. There should be no changes indicated in a submitted clean copy. In addition in i) "(e.g" appears in brackets, where there is no closing parenthesis and a period is present outside the brackets.

Claim Objections

2. Claims 3, 8, and 9 are objected to because of the following informalities: For claim 3, in a) and b), applicant appears to claim the same organosilane twice, namely $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$. It appears that one of these recitations should be deleted. In b), the capital "N" should be changed to a lower case "n" to correspond to the formulas set forth therein. In f), there is a comma within the word alkyl in the definition of R that should be deleted. Also, in the definition of the R' groups, the "or" in $-\text{NH}-(\text{CH}_2)_3\text{Si}(\text{or})_3$ and the "c" in $-\text{OOC}(\text{CH}_3)\text{c}=\text{CH}_2$ should be capitalized. In the definitions set forth in g), there is a ")" after alkyl in R'"'"' that should be deleted. In (j), in the definition of R', there is a period after aryl. Normally periods are reserved to indicate the end of a claim, and as such the period should be deleted. In (k), the formula of the silazane is objected to because the hydrogen bonded to the nitrogen atom is distorted. Last, there is a comma that appears after the period at the end of the claim that should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3, 8, and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 3, in a), b), c), d), e), f), g), h), i), (j), (k), (l), and (m), applicant uses the phrase "of the type". This is indefinite because it is not known if the compounds used are of the formulas or not. Also, in the definitions of variables X, R', R where there are multiple elements present, and "or" should be inserted before the last element to indicate that these variables are present in alternative embodiments. In addition, under f), g), and h), in the definition of R', the use of "and" prior to the last element set forth indicates that all of the groups recited are required to be present. The word "and" should be changed to "or".

Under d) and e), why are there two definitions of R'? The purpose of these definitions are unclear.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the

remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 3 recites the broad recitation aryl in f) through the definition of R', and the claim also recites (e.g., -C₆H₅, substituted phenyl groups) which is the narrower statement of the range/limitation.

Also under f), g), h), i), and (j), x is not defined in the group -S_x-(CH₂)₃Si(OR)₃. In f) and g), it is not understood how m may range from 0.1 to 20. It appears to the examiner that m must be a whole number.

Regarding claim 3, under i), in the definition of R, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). In this case, it is not known if the term alkyl is limited to short chain alkyl groups, where there are 1-3 carbon atoms, whether, branched alkyl groups may be used, or whether substitution of the alkyl groups is allowed.

In (l), applicant sets forth cyclic siloxanes D3, D4, or D5, however the formula shown corresponds only to a D4 cyclic siloxane.

Under m), what is the definition of n in R, R', R'', and R'''? Is it the same as given in the definition of Y? In addition, why are there two different definitions of Y in the claim? Are the silyl groups below the formula meant to be included in the definition of Y?

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deller et al. (U.S. Patent No. 5,776,240) in view of Mangold et al. (CA 2,223,377).

For claims 1-3, in column 1, line 48, through column 2, line 5, Deller teaches that pyrogenically prepared silicon dioxide is silanized with alkoxy silanes, silazanes, and or siloxanes. For claims 3, 8, and 9, Deller teaches in column 4, lines 15-28, that octamethylcyclotetrasiloxane is used as the siloxane for silanizing the silicon dioxide. For claims 4, 6, and 7, Deller teaches in column 10, lines 28-35, that the granules are sprayed with water prior to being treated with silanizing agent, treated with the silanizing agent, allowed to mix for 15 to 30 more minutes, and then heated for 1 to 4 hours at 100 to 400°C. Deller fails to teach that the pyrogenically produced oxides are doped by aerosol.

Mangold teaches pyrogenically produced oxides that are doped, including silicon dioxide on page 3, lines 18-22. On page 2, lines 5-22, Mangold teaches that the oxides are doped by aerosol.

Mangold and Deller are analogous art in that they come from the same field of endeavor, namely the use of pyrogenically prepared oxides as catalyst supports. It would have been obvious to one of ordinary skill in the art at the time of the invention to

use the oxides in the treatment process of Deller. The motivation would have been that Mangold states that the doped pyrogenically prepared oxides have advantages over the non-doped oxides on page 15, lines 8-16. These advantages are in the form of larger cohesive structures, increased sediment volume, and a greatly increased efficiency value. One of ordinary skill in the art would have been motivated by the improvement in these properties in using the doped oxides of Mangold.

7. Claims 1-3, 5, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laüfer et al. (U.S. Patent No. 4,022,152) in view of Mangold et al. (CA 2,223,377).

For claims 1-3, 5, 8, and 9, in column 8, lines 57-61, Laüfer teaches a pyrogenic silicic acid (SiO_2) is treated with octamethyltetrasiloxane. For claim 5, in column 3, lines 59-68, Laüfer discloses that the fillers produced are used in silicone rubbers for a greater thickening effect. Laüfer fails to teach that the pyrogenic silica is doped by aerosol.

Mangold teaches pyrogenically produced oxides that are doped, including silicon dioxide on page 3, lines 18-22. On page 2, lines 5-22, Mangold teaches that the oxides are doped by aerosol.

Mangold and Laüfer are analogous art in that they come from the same field of endeavor, namely the use of pyrogenically prepared oxides as fillers. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the oxides in the treatment process of Laüfer. The motivation would have been that Mangold states that the doped pyrogenically prepared oxides have advantages over the

non-doped oxides on page 15, lines 8-20 including an increase in thickening effect. One of ordinary skill in the art would have been motivated by the improvement in thickening effect in substituting the doped oxides of Mangold for the oxides used in Laüfer.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Deusser et al. (U.S. Patent No. 5,384,194), Deusser et al. (U.S. Patent No. 5,415,936), and Barthel et al. (U.S. Patent No. 5,686,054) for general relevance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (703) 306-5929. The examiner can normally be reached on Mon-Fri 7:00-3:00.

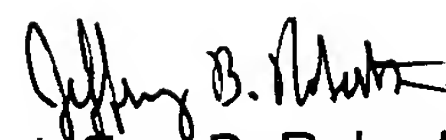
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Dawson can be reached on (703) 308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

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Jeffrey B. Robertson
Examiner
Art Unit 1712

JBR
March 28, 2003